

SS: 1034611 TBB Wall Heater coolant flow improvement

This Service Solution does not imply any special warranty coverage. Standard warranty guidelines and coverage apply. This Service Solution is provided to assist Dealers/Customers in resolving the issue of lack of heat coming from the rear wall heater on Minotours. Thomas has provided availability adding a Booster pump

Applicable Vehicles

Minotours

Symptoms

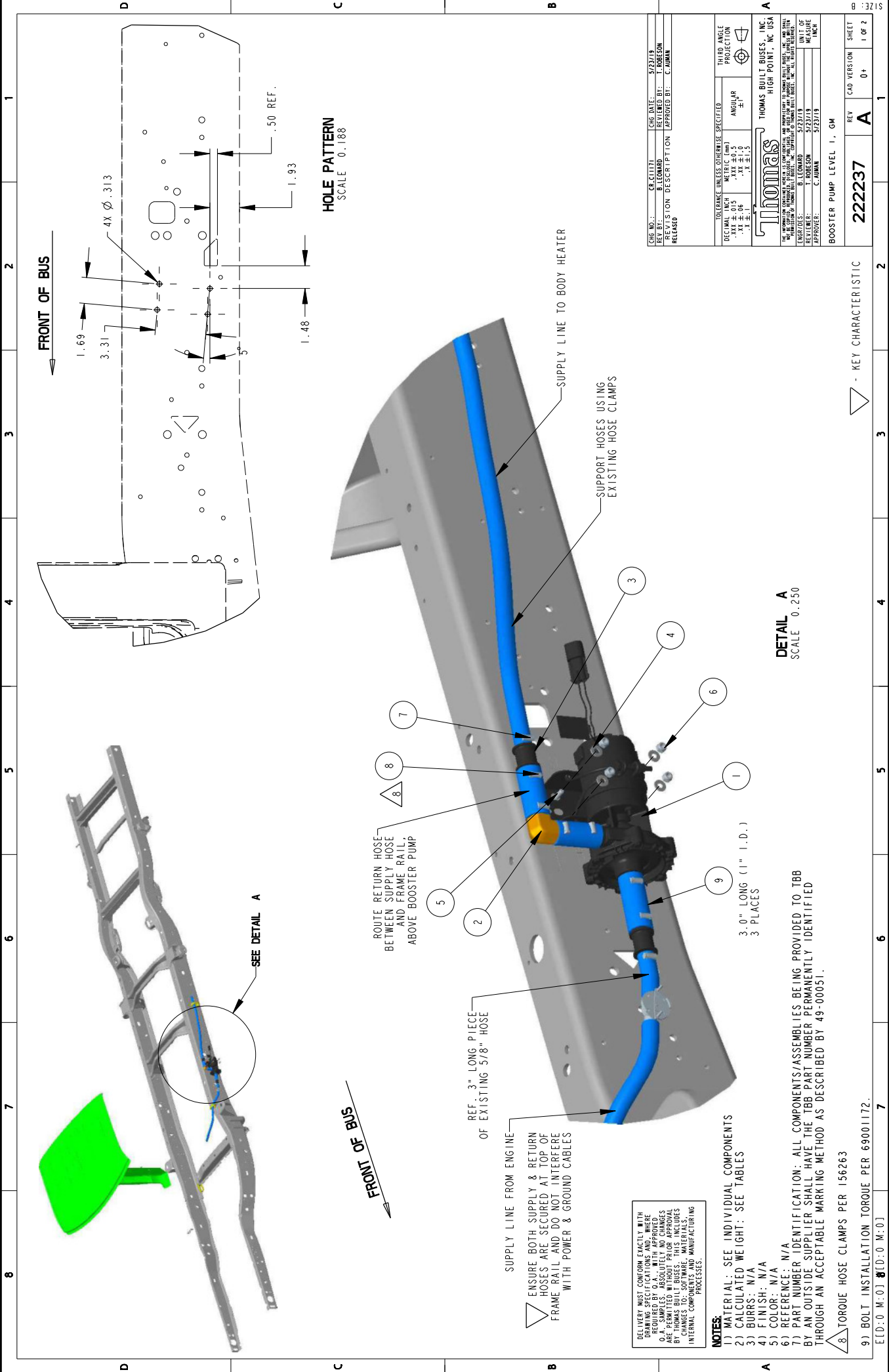
Lack of heat rear wall heater

Issue

Customer dissatisfaction

Solution:

Adding a TBB 184618 Booster pump per diagram TBB 222237 for hole location and plumbing



FRONT OF BUS

SEE DETAIL A

FRONT OF CHASSIS

HOLE PATTERN
SCALE 0.188

ROUTE RETURN HOSE
BETWEEN SUPPLY HOSE
AND FRAME RAIL
ABOVE BOOSTER PUMP

REF. 3" LONG PIECE
OF EXISTING 5/8" HOSE

ENSURE BOTH SUPPLY & RETURN
HOSES ARE SECURED AT TOP OF
FRAME RAIL AND DO NOT INTERFERE
WITH POWER & GROUND CABLES

SUPPLY LINE TO BODY HEATER
SUPPORT HOSES USING
EXISTING HOSE CLAMPS

NOTES:
1) MATERIAL: SEE INDIVIDUAL COMPONENTS
2) CALCULATED WEIGHT: SEE TABLES
3) BURRS: N/A
4) FINISH: N/A
5) COLOR: N/A
6) REFERENCE: N/A
7) PART NUMBER IDENTIFICATION: ALL COMPONENTS/ASSEMBLIES BEING PROVIDED TO TBB
BY AN OUTSIDE SUPPLIER SHALL HAVE THE TBB PART NUMBER PERMANENTLY IDENTIFIED
THROUGH AN ACCEPTABLE MARKING METHOD AS DESCRIBED BY 49-00051.
8) TORQUE HOSE CLAMPS PER 156263

DETAIL A
SCALE 0.250

9) BOLT INSTALLATION TORQUE PER 69001172.
EID: 0 M: 0.1 8 [0 M: 0.1]

CHG NO.:	CR-011171	CHG DATE:	5/23/19
REV BY:	B. LEONARD	REV BY:	T. ROBERTSON
REVISION DESCRIPTION	APPROVED BY: C. AMMAN		
TOLERANCE UNLESS OTHERWISE SPECIFIED			
DECIMAL INCH	METRIC EQUIV	ANGULAR	WELD ANGLE
.XXX ± 0.15	.XX ± 0.5	± 1°	PRELAP
.XX ± .06	.X ± .3		
THOMAS BUILT BUSES, INC. HIGH POINT, NC, USA			
ALL DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED. THE INFORMATION IS FOR INFORMATION ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION. THE INFORMATION IS FOR INFORMATION ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION.			
ENGINEER:	B. LEONARD	5/23/19	DATE
REVIEWER:	T. ROBERTSON	5/23/19	DATE
APPROVER:	C. AMMAN	5/23/19	DATE
BOOSTER PUMP LEVEL 1, GM			
222237	REV	CAD VERSION	SHEET
A	0+	1	1 OF 2

8		7		6		5		4		3		2		1	
222562 BOOSTER PUMP LEVEL 1, SINGLE PLY HOSE, STD. CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	26074365	HEATER HOSE, SINGLE PLY												
222564 BOOSTER PUMP LEVEL 1, H-MILER HOSE, STD. CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000390	HEATER HOSE, HI-MILER												
222566 BOOSTER PUMP LEVEL 1, SILICONE HOSE, STD. CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222563 BOOSTER PUMP LEVEL 1, SINGLE PLY HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	61190427	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
8	6	61190428	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
9	9.0 IN.	26074365	HEATER HOSE, SINGLE PLY												
222565 BOOSTER PUMP LEVEL 1, H-MILER HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	61190427	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
8	6	61190428	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
9	9.0 IN.	66000390	HEATER HOSE, HI-MILER												
222567 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	61190427	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
8	6	61190428	WORM GEAR HOSE CLAMP, CONSTANT TORQUE,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222568 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222569 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222570 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222571 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222572 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222573 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222574 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222575 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222576 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222577 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222578 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7		6		5		4		3		2		1	
222579 BOOSTER PUMP LEVEL 1, SILICONE HOSE, CONSTANT TORQUE CLAMPS WEIGHT: 6.41 LBS.															
ITEM	QUANTITY	PART NUMBER	DESCRIPTION										WEIGHT: 6.41 LBS.		
1	1	184618	PUMP, BOOSTER, BERGSTROM, 12V												
2	8	27150385	WASHER, FLAT, .281 ID, .625 OD,												
3	4	27213546	BOLT, FINISHED HEX,												
4	1	205509	HOSE ELBOW, 90 DEG, 1.00" OD, BRASS												
5	2	177934	REDUCER, HOSE, 1" ID TO 5/8" ID, NYLON												
6	4	61370078	1/4-20 HEX NUT W/NYLON INSERT												
7	2	26036365	WORM GEAR HOSE CLAMP, STANDARD,												
8	6	26037365	WORM GEAR HOSE CLAMP, STANDARD,												
9	9.0 IN.	66000352	HEATER HOSE, SILICONE												

8		7	
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CHG NO.:	CR-C11171	CHG DATE:	5/23/19
REV BY:	B. LEONARD	REVIEWED BY:	T. ROBESON
REVISION DESCRIPTION	APPROVED BY: C. AUMAN		

TOLERANCE UNLESS OTHERWISE SPECIFIED		TYPED ANGLE	
DECIMAL INCH	METRIC INCH	PROJECTION	SECTION
.XXX ± .015	.XXX ± 0.5	ANGULAR	±1°
.XX ± .01	.XX ± .1		
.X ± .005	.X ± .13		

		THOMAS BUILT BUSES, INC.	
11000 W. HARRIS BLVD. SUITE 100, HIGHTSTOWN, NJ 08520 609-426-1100 FAX 609-426-1101 WWW.THOMASBUILT.COM		HIGHT POINT, NC, USA	
ENGINEER:	B. LEONARD	5/23/19	
REVIEWER:	T. ROBERTSON	5/23/19	
APPROVER:	C. AMMAR	5/23/19	
BOOSTER PUMP LEVEL 1, GM			

REV	CAD VERSION	SHEET
222237	A	0+ 2 OF 2